From Satellites ...

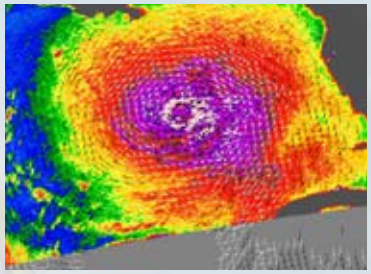
Gravity

NASA's Gravity Recovery and Climate Experiment (GRACE) obtains high-resolution, global measurements of Earth's gravity field from space. After more than six years, GRACE continues to reveal increasingly subtle changes in Earth's gravity field. These gravity variations reflect changes in Earth's mass, such as those caused by changes in ice mass in Greenland and Antarctica, variations in the water content of river basins on land, or mass changes caused by large earthquakes.

http://www.csr.utexas.edu/grace/

PO.DAAC

The Physical Oceanography Distributed Active Archive Center (PO.DAAC) is tasked with managing data to enable understanding and stewardship of the world's ocean. The data support a broad range of applications including weather prediction, climate studies, and the stewardship of ocean resources. PO.DAAC manages and distributes data from NASA missions for sea surface height (SSH), sea surface winds, sea surface temperature (SST), and gravity.



http://podaac.jpl.nasa.gov

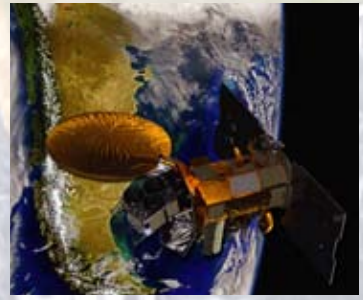
Sea Level

The 16-year data record of highly accurate ocean surface topography (OST) measurements from TOPEX/Poseidon, Jason-1, and OSTM/Jason-2 has allowed scientists to gather long-term information about the world's ocean and its currents. As a valuable indicator of the ocean's role in our climate, OST tells us the rate of sea level rise, where the ocean stores and transports heat, and how it interacts with the atmosphere.

http://sealevel.jpl.nasa.gov

Salinity

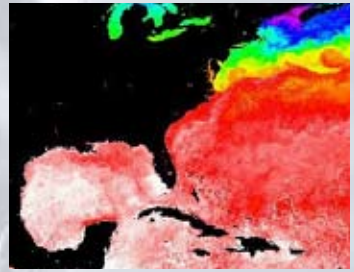
Salinity is a fundamental property of seawater and links climatic variability of ocean circulation and the global water cycle. Conventional ocean measurements (ships and buoys) remain very sparse. NASA's Aquarius/SAC-D mission, due to launch in 2010, will provide accurate global sea-surface salinity measurement from space. These data will be highly complementary to existing satellite programs that monitor sea surface temperature, circulation, and sea level.



http://aquarius.nasa.gov

GHRSST

The aim of the Group for High Resolution Sea Surface Temperature (GHRSST) is to develop a new generation of climate-quality sea surface temperature (SST data) in near real-time for operational use in numerical weather forecasting and ocean modeling, and in climate and oceanographic research. NASA's Global Data Assembly Center (GDAC) is the central clearinghouse for all data products, while NOAA's Long Term Stewardship and Reanalysis facility has the primary responsibility for long-term archival and reanalysis products.



http://ghrsst.jpl.nasa.gov

Ocean Winds

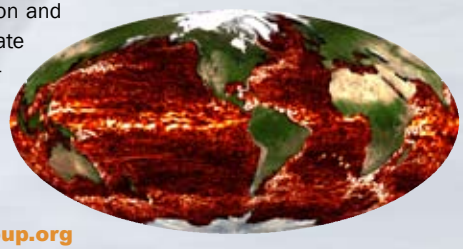
NASA's Quick Scatterometer (QuikSCAT) spacecraft carries the SeaWinds scatterometer, a specialized microwave radar that measures near-surface wind speed and direction under all weather and cloud conditions over the Earth's oceans. Data from the SeaWinds on QuikSCAT are used for climate studies and have been an invaluable source for monitoring and understanding the dramatic change in the Arctic sea-ice cover that has occurred within the last decade.

http://winds.jpl.nasa.gov

... to Climate Estimation

ECCO

The Consortium for Estimating the Circulation and Climate of the Ocean (ECCO) was established in 1998 to produce quantitative depictions of the time-evolving global ocean state by combining diverse observations of the ocean using general circulation models. The products, available to the wide scientific community, are suitable for research and practical applications in ocean circulation and climate, including climate variability and its prediction, biogeochemistry, and geodesy.



http://www.ecco-group.org